What is claimed is:

1. An NMR imaging process, comprising:

subjecting an imaging object to a uniform polarizing magnetic field;

applying orthogonal magnetic field gradients to the imaging object;

applying RF energy to the imaging object according to a fast-spin echo technique;

subsequently applying RF energy to the imaging object according to a driven equilibrium technique;

detecting a nuclear magnetic resonance signal emitted by the imaging object; and

processing the nuclear magnetic resonance signal to provide diagnostic information.

2. The process of claim 1, wherein the diagnostic information is imaging data.

3. The process of claim 1, further comprising:

providing the diagnostic information to a presentation device such that a visual image corresponding to the imaging object can be viewed by an operator; and

making a subjective determination of whether the visual image is of good quality or bad quality.

4. The process of claim 3,

wherein applying RF energy to the imaging object according to a fast-spin echo technique includes applying an RF pulse corresponding to the angular precession frequency for a selected slice of the imaging object, and

further comprising applying an RF pulse corresponding to a different angular precession frequency, to select a respective different slice of the imaging object, if the subjective determination is that the visual image is of good quality.

5. The process of claim 4, wherein the respective different slice of the imaging object is an adjacent slice of the imaging object.

6. The process of claim 5, wherein the selected slice and the adjacent slice overlap.

7. The process of claim 6, wherein the extent of the overlap is greater than 0% and less than or equal to 100%.

8. The process of claim 3,

wherein applying RF energy to the imaging object according to a fast-spin echo technique includes applying an RF pulse corresponding to the angular precession frequency for a selected slice of the imaging object; and

further comprising applying another RF pulse corresponding to the angular precession frequency, to select the same slice of the imaging object, if the subjective determination is that the visual image is of bad quality.

9. The process of claim 3, further comprising tagging the diagnostic information, if the subjective determination is that the visual image is of bad quality.

10. The process of claim 9,

wherein applying RF energy to the imaging object according to a fast-spin echo technique includes applying an RF pulse corresponding to the angular precession frequency for a selected slice of the imaging object; and

further comprising automatically applying an RF pulse corresponding to a different angular precession frequency, to select a respective different slice of the imaging object.

11. The process of claim 10, wherein the respective different slice of the imaging object is an adjacent slice in a sequence of slices of the imaging object.

12. The process of claim 11, wherein the selected slice and the adjacent slice overlap.

13. The process of claim 12, wherein the extent of the overlap is greater than 0% and less than or equal to 100%.

14. The process of claim 11, further comprising:

automatically applying an RF pulse corresponding to a final angular precession frequency, to select a final slice in the sequence of slices of the imaging object; and

applying an RF pulse corresponding to the angular precession frequency that corresponds to the tagged image data.

15. The process of claim 1, wherein the imaging object is a human being, and the uniform polarizing magnetic field is produced by a magnetic resonance imaging system, wherein the human being stands upright within the uniform polarizing magnetic field.

16. The process of claim 1,

wherein applying RF energy to the imaging object according to a fast-spin echo technique includes applying an RF pulse corresponding to the angular precession frequency for a selected slice of the imaging object; and

further comprising, after providing the diagnostic information, moving the imaging object and applying an RF pulse corresponding to the same angular precession frequency, to select a different slice of the imaging object.

17. The process of claim 16, wherein moving the imaging object includes changing the angle of the imaging object with respect to the uniform polarizing magnetic field.

18. The process of claim 1, wherein the fast-spin echo technique includes application of a multi-echo NMR imaging sequence.

19. The process of claim 18, wherein the multi-echo NMR imaging sequence includes a plurality of different echoes, and wherein each of the plurality of different echoes is encoded differently.

20. The process of claim 18, wherein the multi-echo NMR imaging sequence includes a plurality of different echoes, and wherein at least one of the plurality of different echoes is encoded differently than another one of the plurality of different echoes.

21. The process of claim 18, further comprising applying a 90-degree RF pulse at the center of any of the plurality of different echoes.

22. The process of claim 21, wherein the applied 90-degree RF pulse has a phase such that magnetization of the imaging object is forced in the direction of the uniform polarizing magnetic field.

23. The process of claim 18, wherein the multi-echo NMR imaging sequence includes a first 90-degree RF pulse followed by a series of 180-degree RF pulses.

24. The process of claim 23, wherein the series of 180-degree RF pulses includes *n* 180-degree pulses, which are followed by *n* echoes.

25. The process of claim 24, further comprising applying a second 90-degree RF pulse at a center of the *nth* echo, such that magnetization of the imaging object is oriented in the direction of the uniform polarizing magnetic field.

26. An NMR imaging process, comprising:

subjecting an imaging object to a uniform polarizing magnetic field;

applying orthogonal magnetic field gradients to the imaging object;

applying a first 90-degree RF excitation pulse;

applying a sequence of 180-degree RF excitation pulses following the first 90-degree RF excitation pulse;

applying a second 90-degree RF excitation pulse following the sequence of 180-degree RF excitation pulses;

detecting a nuclear magnetic resonance signal emitted by the imaging object; and

processing the nuclear magnetic resonance signal to provide diagnostic information.

27. The process of claim 26, wherein the diagnostic information is imaging data.

28. The process of claim 26, further comprising:

providing the diagnostic information to a presentation device such that a visual image corresponding to the imaging object can be viewed by an operator; and

making a subjective determination of whether the visual image is of good quality or bad quality.

29. The process of claim 28,

wherein the first 90-degree RF excitation pulse corresponds to the angular precession frequency for a selected slice of the imaging object; and

further comprising applying an RF pulse corresponding to a different angular precession frequency, to select a respective different slice of the imaging object, if the subjective determination is that the visual image is of good quality.

30. The process of claim 29, wherein the respective different slice of the imaging object is an adjacent slice of the imaging object.

31. The process of claim 30, wherein the selected slice and the adjacent slice overlap.

32. The process of claim 31, wherein the extent of the overlap is greater than 0% and less than or equal to 100%.

33. The process of claim 28,

wherein the first 90-degree RF excitation pulse corresponds to the angular precession frequency for a selected slice of the imaging object; and

further comprising applying another RF pulse corresponding to the angular precession frequency, to select the same slice of the imaging object, if the subjective determination is that the visual image is of bad quality.

34. The process of claim 28, further comprising tagging the diagnostic information, if the subjective determination is that the visual image is of bad quality.

35. The process of claim 34,

wherein the first 90-degree RF excitation pulse corresponds to the angular precession frequency for a selected slice of the imaging object; and

further comprising automatically applying an RF pulse corresponding to a different angular precession frequency, to select a respective different slice of the imaging object.

36. The process of claim 35, wherein the respective different slice of the imaging object is an adjacent slice in a sequence of slices of the imaging object.

37. The process of claim 36, wherein the selected slice and the adjacent slice overlap.

38. The process of claim 37, wherein the extent of the overlap is greater than 0% and less than or equal to 100%.

39. The process of claim 36, wherein the first 90-degree RF excitation pulse corresponds to the angular precession frequency for a selected slice of the imaging object, the process further comprising:

automatically applying an RF pulse corresponding to a final angular precession frequency, to select a final slice in the sequence of slices of the imaging object; and

applying an RF pulse corresponding to the angular precession frequency that corresponds to the tagged image data.

40. The process of claim 26, wherein the imaging object is a human being, and the uniform polarizing magnetic field is produced by a magnetic resonance imaging system, wherein the human being stands upright within the uniform polarizing magnetic field.

41. The process of claim 26,

wherein the first 90-degree RF excitation pulse corresponds to the angular precession frequency for a selected slice of the imaging object; and

further comprising, after providing the diagnostic information, moving the imaging object and applying an RF pulse corresponding to the same angular precession frequency, to select a different slice of the imaging object.

42. The process of claim 41, wherein moving the imaging object includes changing the angle of the imaging object with respect to the uniform polarizing magnetic field.

43. The process of claim 26, wherein each said 180-degree RF excitation pulse in the sequence generates a spin echo.

44. The process of claim 43, wherein each said spin echo precedes a next 180-degree RF excitation pulse in the sequence.

45. The process of claim 43, wherein the second 90-degree RF excitation pulse is applied at a center of the spin echo generated by a last 180-degree RF excitation pulse in the sequence.

46. The process of claim 43, wherein each said spin echo is encoded differently.

47. The process of claim 43, wherein at least one said spin echo is encoded differently than another said spin echo.

48. The process of claim 26, wherein the second 90-degree RF excitation pulse has a phase such that magnetization of the imaging object is forced in the direction of the uniform polarizing magnetic field.